

## Using AI Tools to Enhance Translation Skills among Basic Education English Major Students

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### Abstract

The current study aimed to investigate the effect of using some artificial intelligence tools on developing some translation skills for fourth-year Basic Education English major students, Faculty of Education, Damietta University. A quasi-experimental design was employed. Some translation skills were determined using a checklist that was approved by a jury of EFL specialists. The researcher prepared and administered a translation skills test and a translation rubric. Participants were randomly selected and divided into three groups (n = 62) in the academic year 2022-2023. The first experimental group (n = 21) received instruction through Neural Machine Translation (NMT) tools such as Google Translate and Reverso. The second experimental group (n = 20) received instruction through Large Language Models (LLMs); ChatGPT, and QuillBot. The third experimental group (n = 21) received instruction through the integration of both tools. A pre-posttest was administered to the three groups to assess certain translation skills. Each experimental group was taught separately via the intended intervention. Post-implementation of the pre-posttest was administered at the end of the intervention. Results demonstrated the effectiveness of NMT and LLMs in enhancing the translation skills of the participants. All three groups showed improvements in their translation skills. The third experimental group had the highest scores, followed by the second group, and then the first group.

**Key words:** AI Tools; Neural Machine Translation (NMT); Large Language Models (LLMs); Translation Skills; Basic Education English Major Students

استخدام أدوات الذكاء الاصطناعي في تعزيز مهارات الترجمة لدى طلاب شعبة  
التعليم الأساسي تخصص اللغة الإنجليزية  
إيمان عبد الحفيظ محمد عمارة  
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هدفت الدراسة الحالية إلى معرفة أثر استخدام بعض أدوات الذكاء الاصطناعي في تنمية بعض مهارات الترجمة لدى طلاب شعبة التعليم الأساسي، تخصص اللغة الإنجليزية بكلية التربية – جامعة دمياط. حيث استخدمت الباحثة التصميم شبه التجريبي. و شملت الدراسة اثنتين وستين طالبًا وطالبة في العام الأكاديمي 2023/2022، وتم تقسيمهم إلى ثلاث مجموعات تجريبية. استخدمت الباحثة مع المجموعة التجريبية الأولى أدوات من أدوات الترجمة الآلية العصبية، بينما استخدمت مع المجموعة التجريبية الثانية أدوات من نماذج اللغة الكبيرة. أما المجموعة الثالثة، فقد تم استخدام الباحثة الأدوات معا. تم إجراء اختبار قبلي للمجموعات الثلاث لتقييم بعض مهارات الترجمة، وتم عمل مقياس متدرج لتقييم أداء الطلاب في الترجمة، ثم تمت معالجة كل مجموعة على حدة. عقب الانتهاء من المعالجة، تم تطبيق الاختبار البعدي. أظهرت نتائج الدراسة فعالية كل من أدوات الترجمة الآلية العصبية ونماذج اللغة الكبيرة في تحسين مهارات الترجمة لدى المشاركين. وأظهرت النتائج تحسناً في مهارات الترجمة لدى المجموعات الثلاث، حيث حققت المجموعة التجريبية الثالثة أعلى الدرجات بين المجموعات الثلاث، تلتها المجموعة التجريبية الثانية، ثم المجموعة التجريبية الأولى.

**الكلمات المفتاحية:**

نماذج اللغة الكبيرة، الترجمة الآلية العصبية، أدوات الذكاء الاصطناعي، شعبة التعليم الأساسي، تخصص اللغة الإنجليزية

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### **Introduction**

Learning a language gives students the ability to think creatively and unconventionally. It enables people to think, speak, hear, listen, read, and write in previously unthinkable manners (Mansor, Zakaria, Abd Rashid, Azmy, Hairiel, & Zakaria, 2021). Additionally, Johri, Khatri, Al-Taani, Sabharwal, Suvanov, and Kumar, (2021) declare that language serves as a channel for conveying thoughts, information, and ideas, as well as emotions, imperfections, and ambiguity. It is challenging to view language merely as a set of mathematical rules that operate in concert to construct sentences or phrases. Consequently, this complexity poses difficulties in creating a coherent system that can be applied to machines to comprehend language and provide responses in a similar fashion.

Translation has been an important aspect of communication throughout history, with translators undertaking the crucial task of delivering cultural and religious texts to other cultures (Kocabiyık, (2022). In order to communicate knowledge across cultures, languages, and nations, translation is crucial. It is challenging because it requires accurately and smoothly translating the meaning or intent from one language to another. Fundamental elements of the text and its translation, as well as the meaning the text expresses, are covered by translation ideology. In translation, this ideology serves as the basis for cognition, activity, and conduct. It is essential because it illustrates how decisions made by translators affect the final product of translation. The goal of the translation and the target audience are often the source of biases in translation (Ryan, 2020).

As time has changed, language and communication have changed. Communication methods have also changed (Wang & Winstead, 2016). Therefore, the teaching and learning of English methods have changed too. Sun (2022) believes that translation involves two languages to communicate with different audiences, which can be challenging, especially when the languages are dissimilar. Literary translation connects languages and cultures by introducing foreign concepts to the target reader. Recently, the integration of advanced technologies into

education creates immersive and engaging learning experiences (Kim, Merrill, Xu, & Sellnow, 2020).

A recent study by An, Ma, Lin, Zheng, Lou, and Chen (2023) investigate advancements in Large Language Models (LLMs) and their ability to solve mathematical problems. They introduce the LEarning from MistAkes (LEMA) approach, which enhances LLMs by mimicking human learning. LEMA fine-tunes LLMs with mistake-correction data pairs generated by GPT-4, involving mistake identification, explanation, and correction. Experimental results indicate that LEMA significantly improves the performance of various LLMs in mathematical reasoning tasks. This suggests that incorporating mistake correction into the training of LLMs could be a valuable method to be applicable in translation texts.

Puner and Kelley in Youtube series episode (2023, 00:21:45.180) highlight the rapid development in artificial intelligence, emphasizing the need for qualified teachers to guide this innovation, as the rush to develop AI relies heavily on vast amounts of data that require proper oversight. Akan, Karim, and Chowdhury (2019) assert that translation plays a vital role in daily life, and it is a key method of human communication. It is a sensitive and nuanced task addressing significant challenges. These challenges are more prominent when translating from Arabic to English. Therefore, it requires extensive linguistic expertise to manage both the explicit and implicit aspects of language. Translation entails transferring and transforming various elements from one language to another. As Arabic and English have distinct and distant origins, translating between these languages involves numerous difficulties, particularly regarding vocabulary, grammar, sound, style, and usage.

In today's interactive technological context, everything is just a one-click touch away. Hephzibah (2020) indicates that technologies in educational settings are available round the clock, enabling students immediate support beyond regular class hours, offering swift feedback. As a result, language learning becomes more accessible, convenient, and enjoyable for EFL learners. Learners can gain access to genuine language interactions with proficient speakers and tailor their learning endeavors to cater to their specific requisites and inclinations (Vera, 2023).

AI-based tools and applications offer an engaging setting for developing language skills and aspects. *Vidreader*, or *Seeing AI* tools help improve reading skills (Dong, Yu, Alharbi, Ahmad, 2022). As per speaking and listening skills, an online video pronunciation dictionary using a lexical approach enhances pronunciation, intonation, and word usage in authentic contexts (Fu & Yang, 2019). Furthermore, the AI-driven *ELSA Speak* app enhances speaking skills. *EssayBot*, *QuillBot*, *AI*

*Writer* and *Grammarly* are popular and free AI tools that facilitate writing skills by generating coherent content, examining user-written input, generating well-structured and coherent written content, ensuring error-free text, and checking grammar and spelling. In translation, AI tools like Google Translate, Reverso, and ChatGPT have made significant advances since the emergence of Natural Language Processing (NLP) in the mid-1930s.

### **Literature Review**

Translation is a complex process that involves understanding and reproducing a message from the source language (SL) into the target language (TL) while maintaining the style of the original text. The translator must have competency in both foreign and native languages. The goal of translation is to produce the closest and most reasonable equivalent to the original message in terms of both meaning and style (Lucito, 2020). However, Sipayung, Sianturi, Arta, Rohayati, and Indah (2021) assume that translation is a complex task comprising of three stages: source text analysis, transferring process, and re-expressing to the target meaning. A translator needs to have language competence in both the source and target languages to be successful in all three stages. Language competence indicates the level and type of education.

Venuti (2021) explores the history of translation studies, tracing its development from ancient times to the late nineteenth century when it focused on rhetoric, literary theory, philosophy, and religion. In the twentieth century, the field expanded to include various disciplines such as linguistics, literary criticism, cultural theory, and experimental studies, reflecting the complexities of modern culture. He adds that the progression of translation theory can be seen in the evolving relationships between the autonomy of translated texts and the concepts of equivalence and function. Equivalence pertains to how accurately the translation reflects the source text, encompassing notions of accuracy and fidelity. Function involves the effects of the translated text, including information communication and cultural impact, highlighting its role in connecting to the target language and culture.

### **1. Classification of translation**

Akan, Karim, and Chowdhury (2019) classify translation as follows:

1. Literal translation works efficiently when words, phrases, and sentences have semantically and structurally equivalent meanings in other languages. However, it isn't recommended for distant languages including Arabic and English as it may be inaccurate especially for multi-word units such as collocations and idioms. This method can be implemented

in three distinct ways: Word-for-Word Translation, One-to-One Literal Translation, and Literal Translation of Meaning.

a. **Word-for-Word Translation** This includes transforming the meaning of each individual word from the source language into the target language using their exact equivalents.

b. **One-to-One Literal Translation and Literal Translation of Meaning** in which each word or phrase from the source language is translated into a similar word or phrase in the target language thereby preserving consistency in number, grammatical class, and language type.

c. **Literal Translation of Meaning** includes translating the meaning of the source material as nearly, accurately, and entirely as possible. This approach, also known as **Close or Direct Translation**, seeks to maintain integrity to the original text. Throughout the translation process, it takes into account the target language's grammar and word order.

2. **Free Translation** which is regarded to be more accurate than literal translation, involves conveying the core of the original text while avoiding any changes to its structure or language. This technique supports conveying the text's fundamental purpose or message over its exact form. It allows for interpretation autonomy, with a priority on preserving the essence of the content rather than translating each word verbatim. Free translation is convenient for both translators and readers since it enables translators to present the content in a style that best matches with their knowledge while still effectively communicating the intended meaning. The common methods of free translation could be classified as **Adaptive Translation, Semantic Translation, Idiomatic Translation, Communicative Translation, Pragmatic Translation, Faithful Translation, Creative Translation, Cognitive Translation, Information Translation, Stylistic Translation, Scientific Translation.**

## **2. Translation of (NMT) and (LLMs)**

Translation serves a crucial role in global communication, facilitating the exchange of ideas, news, literature, and scientific knowledge. Effective translation necessitates a profound comprehension of the target language and culture, linguistic precision, cultural sensitivity, and strategic utilization of appropriate methods (Mounadil, 2023). In his article, Jiang (2022) explains that Neural Machine Translation (NMT) tools have become popular in EFL teaching and learning, but they still have some problems in accurately conveying the proper meaning and implication at the discourse level. However, NMT tools can still benefit EFL students' learning by promoting self-directed learning and improving machine translation evaluation.



Large Language Models (LLMs) represented by OpenAI's ChatGPT have advanced remarkably in recent years. It offered interactive translation using customized prompts. ChatGPT, an AI-powered LLM trained by OpenAI, has demonstrated impressive capabilities in translation. Recent studies show ChatGPT is comparable to or surpasses mainstream NMT engines in translating news, user comments, conversation, social media posts, and scientific texts. As NMT systems and LLMs improve, it may not fully capture the quality of machine translation, and there is a lack of metrics capable of measuring translation quality as humans do (Jiang, & Zhang, 2024).

### **2.1. Google and Reverso Translation**

Google Translate has long been a popular selection for quick and swift translation needs. Tristan (2021) compared Google Translate to Reverso asserting that Reverso is a free AI translation tool that supports translations in 18 languages. Users can input text or speak words within Reverso to receive their desired translations. Translations come with relevant examples and explanations, creating an environment for users to enhance their writing, speaking, and reading abilities. Key features of Reverso include document translation, in-context examples, pronunciation guidance, flashcards, search history review, and the ability to compile vocabulary lists. As for Google Translate, it is generally considered one of the leading machine translation engine, they almost invented it.

### **2.2. ChatGPT translation**

Ahmed, Roy, Kajol, Hasan, Datta and Reza (2023) assert that Generative Pre-trained Transformer (GPT) series, ChatGPT is a set of language models created by OpenAI with natural language processing (NLP) tasks. After undergoing extensive training on large text datasets, these models are refined to enhance their ability to understand and generate human-like.

In their study, Banimelhem and Amayreh (2023) evaluate the performance of using ChatGPT as a machine translation tool for translating English text to Arabic. For evaluating ChatGPT as a machine translator, it was compared with fifteen well-known commercial tools that support English to Arabic Translation. First, fourteenth prompts were suggested and evaluated in order to select the best prompt that should be used with ChatGPT. Then, 100 samples of English sentences from a well-known dataset were used in the evaluation process. They concluded that ChatGPT according to the chosen samples used from the dataset has not a good performance as English to Arabic MT tool.

### **3.Challenges of machine translation for Arabic**

Generally, as for the translation challenges, Akan, Karim, and Chowdhury (2019) confirmed that syntactic differences in Arabic and English can lead to translation challenges, particularly in terms of word order variations, distinct progressive and perfective forms, conditional sentences, articles and grammatical genders, singular, dual and plural forms, and word orders in nominal and verbal structures. Arabic lacks distinct progressive and perfective forms, treating them as past simple, and uses the word "alan" for present progressive. Additionally, personal pronouns can be omitted or embedded in verbal Arabic sentences. Arabic is also more flexible than English, but English has SVC. These differences in syntax, stylistics, phonology, and usage also contribute to the complexity of translations.

Almansor and Al-Ani (2017) elaborate that Arabic, recognized as one of the United Nations' official languages, is spoken by approximately 300 million people globally. The language's complexity, with variations between Modern Standard Arabic (MSA) and various Arabic dialects, presents significant challenges for Arabic Natural Language Processing (NLP). These challenges include spelling inconsistencies across dialects, differences in diacritical marks potentially altering word meanings, and misspellings due to distinctions from MSA. Despite these obstacles, some semantic features remain consistent across Arabic and its dialects.

#### **3.1.Orthography of undiacritized words**

The absence of diacritics in undiacritized Arabic conveys challenges in delivering phonological aspects. Arabic primarily utilizes consonantal roots, with certain letters serving as both consonants and long vowels. Diacritical marks signify short vowels, while some words include doubled vowels at the end. Though this system offers partial phonological information. Without diacritics, pronunciation can become ambiguous, leading to multiple meanings and pronunciations (Maroun, 2018). Abdelali (2023) asserts that diacritization assigns diacritical marks to each Arabic word, ensuring accurate pronunciation and meaning. Boudchiche and Mazroui (2015) contend that the absence of diacritics heightens ambiguity, particularly problematic for natural language processing applications.

#### **3.2. Arabic pro-drop:**

According to Alshahrani (2018), Arabic pro-drop emphasizes the ambiguity that characterizes Arabic sentences. Pro-drop is the term for the situation when subject pronouns are left eliminated from phrases when context makes apparent what they mean. As a result, it is up to syntactic interpreters or analyzers to decide if a pronoun has been left out



of the subject position. In this case, "أكلت التفاحة" either means "(She) ate the apple" or "The apple was eaten."

### 3.3. Free word order

Alshahrani (2018) also discusses another aspect of ambiguity: free word order. In Arabic, sentences can be structured with varying orders of verb, subject, and object components—such as verb-subject-object (VSO), verb-object-subject (VOS), subject-verb-object (SVO), and object-verb-subject (OVS)—without altering the core meaning of the sentence.

### 3.4. Idiomaticity and proverbs in English and Arabic

In their study, Al Madhoun (2020) investigates the distinction between proverbs and idioms. They identify proverbs as a brief and widely recognized statements, conveying shared beliefs or practical wisdom through metaphorical language, offering valuable insights. In contrast, idioms are multi-word expressions whose collective meaning cannot be inferred from the literal interpretation of their individual words. Idioms function as a form of figurative language, conveying specific emotions or concepts, and are crafted to be understood figuratively rather than literally. These expressions are deliberately constructed to convey ideas uniquely and creatively, even though they may appear nonsensical when interpreted word-for-word.

In this regard, Mounadil (2023) asserts that there are difficulties in translating proverbs and idioms from English to Arabic, which could alter the original meaning and lead to grammatical imperfections and understanding issues. For idiomatic expressions, a variety of translation strategies are frequently used, including omitting, paraphrasing, replacement with comparable idioms, and changing the form. Some strategies, though, such leaving out parts of the statement, were considered inappropriate. Two main methods for translating proverbs were found: literal translation and paraphrase. Both methods could change the meaning of the proverb in the target language.

## 4. Disadvantages of integrating AI tools

### 4.1. Translation and Global or nonteacher teacher

Sun (2022) argues that while the main goal of translation is communication, various constraints significantly limit its effectiveness, leading to frequent instances of literary untranslatability. This challenge often disrupts successful communication. Translation aims to convey the original message to the target audience, but when this effort fails, communication breakdowns occur, which happens quite frequently.

George and Jacob (2020) indicate that the role of a teacher has significantly evolved. Teachers' role has shifted from mere preacher to

the manager of students social and emotions behaviours; motivator for slow learner and a fast learner in digital environment. Teachers now must develop competencies in various aspects of technology beyond traditional settings; they have to encompass productivity tools, research applications, communication platforms, media creation, and presentation software. Through technology local norms and habits spread to a global level in EFL context. In AI context, teacher have to perform the role of glocal teacher. Mihr (2022) defines the term "glocal" as a combination of global and local concepts.

Trippestad and Huang (2015) refer to "glocal" teaching as an approach that combines global and local perspectives in education. It recognizes the influence of globalization on education, such as global public spheres and multiculturalism, while also considering the importance of local contexts and traditions. This approach allows teachers to incorporate global perspectives into their teaching while considering the needs of their students and the local context. "glocal" teaching seeks to find a balance between the global and the local in education. Nevertheless, AI tools overuse from the teachers and students as well may convert teachers to nonteaching teachers or nonteaching staff at school.

UNESCO Institute for Statistics (2023) defines non-teaching staff as persons employed by educational institutions who have no instructional responsibilities. Although the definition can vary from one country to another, non-teaching staff generally include headteachers, principals and other administrators of schools, supervisors, counsellors, school psychologists, school health personnel, librarians or educational media specialists, curriculum developers, inspectors, education administrators at the local, regional, and national level, clerical personnel, building operations and maintenance staff, security personnel, transportation workers and catering staff. Teachers' role may be confined to being a director of using AI tools in EFL settings. They may not be the first pronouncers of the words, reading comprehension passages, translators for target language. They may gradually and surreptitiously use their real roles as teachers.

#### **4.2. Teacher Training and Translation Credibility**

Lack or undesirable training by some teachers who believe negatively in using AI tools may persist or show undesirable adoption for them. Others may interpret that they are not using AI tools because of the insufficient training they receive from their institutions. As per the findings of Johnson, Jacovina, Russell, and others in 2016, the primary reason frequently mentioned for the insufficient adoption of technology in

educational settings is the insufficiency of professional development and training. In their study, Kim, Merrill, Xu, and Sellnow (2020) urge that teachers receive training on how to deploy AI teaching assistants properly. To ensure that practicing educators are knowledgeable about pedagogical best practices for using AI teaching assistants and how to successfully integrate AI into their practices, ongoing training and assistance should also be given to them.

In their study's conclusion, Akram, Abdelrady, Al-Adwan, and Ramzan (2022) noted a number of challenges and hurdles those learners faced when effectively integrating digital tools into their lesson plans. These obstacles included inadequate infrastructure, load shedding, poor internet speeds, a lack of experience with online instruction, and insufficient instruction. In our gold rush digital age, learners perceive shared data as untrusting entities. Teachers are no longer the sole trustworthy sources of information. When teachers provide learners with information or answer their questions, students promptly turn to search engines like Google. They delve into these search engines, immersing themselves in a vast reservoir of accessible knowledge. This shift represents a move from "learn how to learn" to "let me do it for you." and a transition from the DIY (Do It Yourself) approach to learning to the DIFM (Do It For Me) approach.

### **4.3. AI and content hallucination**

One major drawback with ChatGPT is "Artificial Hallucinations, a shortcoming that causes it to create experiences that seem realistic but don't match the real-world input. This problem, which is most noticeable when training on large unsupervised datasets, stems from its predictive nature, which causes the creation of inaccurate and hallucinated content. Concerns have been raised about ChatGPT's dependability, especially in critical domains like education where errors and delusions could have serious repercussions. For them, ChatGPT's answers are inaccurate, and that a sizable amount of AI-generated research proposals contain content that appears to be hallucinated (Ahmed , Roy, Kajol, Hasan, Datta & Reza 2023).The unreasonable use of AI tools, especially ChatGPT, includes the creation of gimmick, deepfakes or misleading content, particularly when applied to English-to-other-language translation, which represents a crucial concern.

Khoshafah (2023) argue that when using ChatGPT for translation, users should cognizant its limitations in translating highly technical or specialized content, such as legal documents, medical reports, and scientific studies, as well as material involving religious, historical, and literary terminology. Additionally, ChatGPT may produce culturally

insensitive results, especially in translating idioms, humor, and informal language, as it lacks a deep understanding of cultural nuances. Abid Haleem, Javaid, Singh (2022) state OpenAI acknowledges that ChatGPT may occasionally respond to harmful instructions, display biased behavior, and generate responses that sound reasonable but are factually incorrect or nonsensical.

The artificial intelligence program ChatGPT, which has achieved significant global success and passed the US medical licensing exam, faces certain limitations in dealing with Arabic content, resulting in surprising answers that have been shared on social media. In a simple experiment, a question was posed to ChatGPT regarding the dropping of Arabic letters from printed words in space, and the program's response, without correction or denial of the information, was as follows:

*"Yes, Arabic letters do fall off printed words in space due to the absence of gravity. Arabic books are printed using small dots placed above the letters to distinguish them, and when books float in space without gravity, the force of motion causes these dots to detach from the letters. Consequently, reading Arabic text in space might be challenging due to the dots falling off the letters. However, Latin letters can be used instead of Arabic letters if they are available in the text being read. In this way, readers will not face any issues caused by the dots falling off the letters because Latin letters do not have dots, unlike Arabic letters.*



**Right now, when posing the same question to it, the answer comes as follows:**

LI

هل تسقط حروف اللغة العربية عن الكلمات المطبوعة في الفضاء؟

2 >



لا، حروف اللغة العربية والحروف في أي لغة أخرى لا تسقط من الكلمات المطبوعة في الفضاء بنفس الطريقة التي تحدث في الأفلام أو الروايات الخيالية. في الفضاء، لا توجد جاذبية كافية لسحب الحروف من الصفحات المطبوعة أو الأشياء الأخرى.

الصورة التي ترتسم في أذهان الناس حول تساقط الأشياء في الفضاء غالبًا مستوحاة من الرسوم الكاريكاتورية أو الأفلام الخيالية، وليست تجسيدًا دقيقًا للحقائق الفيزيائية في الفضاء. في الواقع، يمكن أن تطير الأشياء في الفضاء بحرية إذا تم تحريرها أو إذا كانت تحت تأثير الدوران أو التسارع.

LI

هل تسقط حروف اللغة العربية عن الكلمات المطبوعة في الفضاء؟



لا، حروف اللغة العربية أو أي حروف لا تسقط عن الكلمات المطبوعة في الفضاء بشكل تلقائي. الحروف تبقى موجودة على الصفحات المطبوعة كما هي دون تغيير عند تعرضها للظروف الفضائية. في الفضاء، يكون الكتب والمواد المطبوعة معرضة لظروف مختلفة بسبب الفراغ ونقص الجاذبية والإشعاع الشمسي ودرجات الحرارة المتقلبة، ولكن هذه الظروف لا تؤدي إلى تساقط الحروف من الكلمات المطبوعة.

*“No, Arabic letters and letters in any other language do not fall from printed words in space in the same way as depicted in movies or fictional stories. In space, there is not enough gravity to pull letters from printed pages or other objects.*

*The imagery that people have about objects falling in space is often inspired by cartoons or science fiction films, and it is not an accurate representation of the physics in space. In reality, objects can freely float in space if they are released or under the influence of rotation or acceleration.”*

Concerning translation, ChatGPT may hallucinate when translating in various ways through adding adjectives. For example, " ذهبت إلى السوق لشراء "، "The intended English translation may be as follows: "I went to the market to buy some fruits and vegetables," while ChatGPT's translation may be "I went to the market to buy some fresh fruits and organic vegetables. The addition of "fresh" and "organic" is a clear hallucination. ChatGPT may hallucinate through introducing entirely new concepts; for example, in translating " احتفلت المدينة بالمهرجان "، "Intended English translation may be "the city celebrated the annual festival"، while the ChatGPT's translation is "The city celebrated its independence with an annual festival."

#### 4.4. Privacy and accuracy of the AI content

Puner and Kelley (2023) highlight the importance of data in AI and ML, focusing attention to issues with offers for data access, continuing procedural impact, strength over underlying models, and data



modification. The shift to cloud-based systems emphasizes how crucial it is to come up with innovative ways to secure and limit access to these parts in the context of managing and protecting data. Godwin-Jones (2021) argues that unlike the early days of the internet, content creation now only requires a smartphone, reducing barriers to entry. The simultaneous rise in content creation by individuals with minimal technological expertise and the commercialization of online spaces shows that, although the shift has led to the emergence of online influencers and YouTube stars who can monetize their digital presence, the abundance of online content has made it more challenging to discern credible and pertinent information. This underscores the significance of digital literacy in navigating and evaluating online information.

### **5. Translation studies in the Egyptian context**

A significant issue with most current translation teaching practices in Egyptian universities, aside from being a marginalized subject, is that translation lecturers often begin their classes at the end of the translation process. Typically, teachers ask students to translate a given passage at home and then discuss the selected translations in class, critiquing them linguistically. The teacher usually chooses what they believe to be the most appropriate translation without referencing any theoretical framework or explaining their choice to the students. This approach was observed among EFL first-year students at the Faculty of Specific Education, Zagazig University (El-Hallim & Abdalla, 2019).

Haggag (2018) carried out a study on graduates who were not specialized in English at Hurghada Faculty of Education, South Valley University in Egypt, as he discovered their poor level of translation skills. His study aimed to determine the impact of using e-polling of Multiple-Choice Questions (MCQs) on enhancing the translation skills of educational terms for these students. The findings revealed that the e-polling of MCQs significantly improved the participants' translation abilities.

Khalil (2019) claims that English majors at Misr University for Science and Technology lack sufficient knowledge regarding the skills required to be successful document translators. They stated that they had previously received no particular training or subject matter related to document translation. He considers that a critical need is for a training program for English majors at MUST that focuses on translating documents in a realistic, and strategic manner employing Task-Based Language Teaching (TBLT).

In her study, Shehata (2019) stated that second-year English Majors in the Primary Education Branch at Minia University's Faculty of Education



were observed to have low translation skills. These poor translation skills are evident by their scores in the translation course. The researcher attributed this weakness to the lack of systematic training and appropriate learning strategies. Therefore, the researcher discovered that metacognitive strategies significantly aid language acquisition.

In line with idiom translation, Roshdy (2020) stated that English majors at English language department at the Faculty of Alsun, Minia University. experience difficulties with English expressions and idioms across different translation fields. They also face challenges in composition skills when translating from Arabic to English. Additionally, they encounter problems with the cultural aspects of translation, often leading to misunderstandings of the text's context due to cultural differences. Therefore, he computer-mediated communication.

Haroon (2021) estimates that students participating in the English Language Translation program at Cairo University's Open Learning Centre have a poor level of translation proficiency, which results in the graduation of translators with insufficient capacities. Consequently, an inquiry was done regarding the usefulness of the virtual classroom environment in developing translation abilities among open education students. The key finding of the experiment was that teaching students in a virtual classroom setting considerably enhanced their translation skills from English to Arabic and vice versa, as proven by the findings of the tools used.

Additionally, Mohammedain (2021) confirmed that non-specialist English students at Port Said Faculty of Education exhibited limited cultural awareness skills when encountering color idiom activities. They lacked adequate openness and sensitivity to other cultures, demonstrated inappropriate verbal and non-verbal communication with peers from diverse cultural backgrounds, and showed limited ability to evaluate their own and others' local cultures. Consequently, they frequently misinterpreted the original meanings of color idioms. These weaknesses can be attributed to insufficient training in cultural awareness skills.

Barakat (2024) noticed that second-year Cairo Higher Institute for Languages and Simultaneous Interpretation students struggle with their translating skills. They are unable to accurately translate materials from English to Arabic and vice versa, and their performance demonstrates a deficit in their translation abilities. They also have a negative attitude regarding English-to-Arabic translations. Her study found that self-regulation tactics significantly improved translation skills and attitudes among experimental group participants. Based on the findings, it was suggested that lecturers pay particular focus on the development of

translation skills and attitudes toward translation in English among university students by employing self-regulation procedures. In addition, self-regulation strategies for enhancing other language abilities were offered.

### Context of the Problem

The problem of the present study emerged from the following resources:

*First, as a TEFL lecturer, the researcher experienced that fourth-year Basic Education English major students struggle with their translation skills.* They are unlikely to accurately translate passages from English to Arabic or vice versa. Their performance revealed a deficiency in their translating abilities.

*Second*, this is further supported by reviewing previous studies in the Egyptian context. Some of these related studies are as follows: Haggag (2018), Khalil (2019), Shehata (2019), Roshdy (2020), Mohammedain (2021), Haroon (2021), and Barakat (2024). That is to say, the poor performance of students as mentioned, respectively, in the following institutions: Faculty of Education, Damanhour University, Hurghada Faculty of Education, Misr University for Science and Technology, Primary Education Branch at Minia University's Faculty of Education, English language department at the Faculty of Alsun, Minia University, non-specialist English students at Port Said Faculty of Education, English Language Translation program at Cairo University's Open Learning Centre, and Cairo Higher Institute for Languages and Simultaneous Interpretation, are apparent. This weak level may be attributed to a combination of inadequate specialized training, insufficient practice, and a lack of focus on the cultural and contextual aspects of translation. Non-English-specialized graduates struggle with basic translation skills due to limited exposure and training, while English majors face difficulties with idiomatic expressions, composition, and cultural nuances.

*Third*, for documenting such a problem, the current researcher conducted a pilot study on a sample of (n = 15) participants of Basic Education English major students. The researcher tested those students through giving them two passages to translate; first passage was from English to Arabic, and the second passage was from Arabic to English. The results of the translation skills test indicated that the students' performance in these skills was below 30%. Table 1 illustrates the percentage of students' responses to each translation skill.

Table 1  
*Results of the pilot translation skills test*

Translation Skill	Percentage
Equivalency	25%
Fluency	20%
Accuracy	15%
Cultural Context	10%
Naturalness	30%

### Statement of the Problem

Based on the previously related studies and the results of the pilot study, it is obvious that the present study addresses the issue of poor translation skills among 4<sup>th</sup> year Basic Education English Division major students. This problem may be attributed to the challenges they face in accurately translating texts from English to Arabic and vice versa. That is why the present study aimed to investigate the effect of AI tools; Neural Machine Translation (NMT) tools like Google Translate and Reverso, as well as large language models (LLMs) such as ChatGPT and QuillBot - on enhancing 4<sup>th</sup> year major students Basic Education English Division translation skills.

### Questions of the study

The current study tried to find an answer to the following question: To what extent could NMT and LLMs tools be effective in enhancing EFL students' translation skills? The previous question is further branched out into the following sub-questions:

1. What are the translation skills that ought to be developed for Basic Education English major students?
2. What is the effect of NMT on developing the first experimental group of EFL Basic Education English Major Students translation skills?
3. What is the effect of LLMs on developing the second experimental group of EFL Basic Education English major students' translation skills?
4. What is the effect of integrating NMT and LLMs on developing the third experimental group of EFL Basic Education English major students' translation skills?

### Hypotheses of the Study

- a. "There are no statistically significant differences between the mean scores of the first experimental group (NMT) pre- and post administrations of translation skills test

- b. “There are no statistically significant differences between the mean scores of the second experimental group (LLMs) pre - and post administrations of translation skills test”.
- c. “There are no statistically significant differences between the mean scores of the third experimental group (integration between NMT and LLMs) pre - and post administrations of translation skills test”.
- d. “There are no statistically significant differences between the mean scores of the three experimental groups in the post-administrations of translation skills test”.

### **Significance of the study**

#### **The significance of the present study emerged from the following:**

1. It tried to fill the gap in the review of the literature in the studies related to translation skills development through AI-various tools.
2. It provided fourth-year EFL Basic Education English majors with the opportunity to enhance their translation skills by using NMT and LLMs tools.
3. It offered faculty members and course designers theoretical and practical aspects of utilizing AI tools such as NMT and LLMs as well as enhancing translation skills.
4. It might help researchers to find out about recent avenues of research regarding the use of AI tools in EFL learning and teaching.

### **Definitions of terms**

#### **AI tools**

In the current study, operationally, AI tools means tools such as Machine Translation (NMT) tools like Google Translate and Reverso and Large Language Models (LLMs) such as ChatGPT and QuillBot in developing some translation skills of 4th year Basic Education English Division major students. These translation skills, such as equivalency, encompass vocabulary and idiomatic expression. Fluency is divided into two core skills: grammatical cohesion and clarity. Accuracy includes lexical consistency and contextual appropriateness. Cultural context involves cultural nuances and cultural sensitivity. Finally, naturalness leads to smoothness and authenticity.

#### **Fourth year Basic Education English Division major students**

Operationally, fourth-year Basic Education English Division major students refers to students who are in their fourth and final year of study in the Basic Education program, specializing in the English Division at the Faculty of Education, Damietta University. These students are pursuing an academic and professional curriculum focused on English

language teaching and translation skills, preparing them for careers in education and language instruction.

## **Method**

### **Design of the study**

In the present study, a quasi-experimental design was employed, wherein sixty-two students in three intact groups were randomly allocated into three experimental groups. The first experimental group is taught utilizing NMT (Neural Machine Translation) tools, which are represented in Google Translate and Reverso. The second experimental group is taught using Large Language Models (LLMs) tools, including ChatGPT and QuillBot. The third experimental group is taught through the integration of Neural Machine Translation (NMT) and Large Language Models (LLMs) tools. All groups underwent a pre-post test developed by the researcher.

### **Participants of the study**

The study was limited to a sample of 62 major students enrolled in the Basic Education English Division, 4<sup>th</sup> year, at the Faculty of Education, Damietta University in the academic year 2022-2023. They were randomly assigned to three groups: the NMT group (N = 21), the LLMs group (N = 20), and the integration between both tools in the third group (N = 22).

### **Variables**

-Independent Variable

The use of some AI tool in enhancing some translation skills.

- Dependent Variable

Enhancing the translation skills of fourth-year Basic Education English Division major students.

### **Instruments of the study**

For addressing the research questions in the present study, the researcher developed the following instruments: A sub-skills translation list, a translation skill scoring rubric, and a pre-post-test to assess students' translation performance before and after the intervention,

### **The Translation Skills Checklist**

#### **Purpose of the Checklist**

The researcher prepared a translation skills list to determine the most required translation skills for 4<sup>th</sup> year students at the Basic Education English Division.

#### **Sources and Content of the Checklist**

The translation skills included in the checklist in its primary form were determined through reviewing the theoretical backgrounds of some studies focusing on developing translation skills, strategies, machine

translation, its challenges in translating, and translation problems in the Egyptian context; Haggag (2018), Khalil (2019), Al Madhoun and Elyan (2020), Zakraoui, Saleh, Al-Maadeed, & Alja'am (2021), Barakat (2024). The checklist in its initial version included eight main translation skills including 13 sub-skills (see Appendix A).

### **Validity of Translation Checklist Skills**

The list of translation skills was categorized into highly required, required, less required, and not required. It was evaluated by a panel of experts in curriculum and instruction EFL to determine their importance, appropriateness for participants in the study, sub-skill representativeness, and necessary modifications. Based on their feedback, the following adjustments were made: omitting the skills "Mastering the use of translation tools," "Managing the formatting and document handling," and "Software Integration" along with their subskills, as they are not primarily associated with translation skills. Additionally, the selected tools in the current study do not require extensive proficiency in dealing with technology as they are very user-friendly. Furthermore, they suggested confining the list to five main skills, each branching into two subskills.

### **Translation Skills Test**

#### **Test Construction**

The test consisted of four parts. Part one, which involved translating a story from English to Arabic, covered both fluency and accuracy. Fluency includes grammatical cohesion and clarity, while accuracy encompasses lexical consistency and contextual appropriateness. The second part consisted of five sentences of proverbs from English to Arabic. The third part involved translating five idioms from Arabic to English; the second and third parts covered cultural context and equivalency. The cultural context contains cultural nuances and cultural sensitivity. Equivalency contains vocabulary and idiomatic expression. The fourth part was a text from Arabic to English. It covered fluency and naturalness skills. Naturalness contains smoothness, fluidity, and authenticity. For the test (see Appendix B).

#### **Test Objective**

The objective of the test was to assess Basic Education English major students' translation skills through their responses to four free translation questions.

#### **Piloting the Test**

The pre- and post-translation tests was piloted on 20 students enrolled in the Basic Education English major program, excluding those participating in the main experiment. This pilot study took place two weeks prior to the



main experiment. Its purpose was to assess the validity and reliability of the test and to estimate the required test duration. Two independent raters examined the answers of the group of 20 students who piloted the test. Using Pearson's coefficient correlation between the first and second rater's estimations, it was found that the correlation coefficient was ( $r = 77.0$ ), which is significant at the level of 0.01.

Pearson's coefficient of correlation was used to analyze the two test administrations for 20 students. The correlation for the pretest was  $r = 0.85$  and for the post-test was  $r = 0.83$ , both of which are significant at the 0.01 level. Two raters, the researcher and another EFL lecturer, evaluated the students' EFL translation skills in the pre- and post-tests, and the mean was calculated to ensure the objectivity of scoring the test. The two raters had the same knowledge and experience. They used the EFL translation skills scoring rubric to measure students' EFL translation skills (see Appendix C). This rubric included five translation skills: equivalency, fluency, accuracy, cultural context, and naturalness. Each of these skills was rated on a scale of 5 (excellent), 4 (good), 3 (satisfactory), 2 (needs improvement), and 1 (unsatisfactory).

### **Test Validity**

To establish the content validity of the test, it was evaluated by six TEFL staff members to determine its validity in terms of the relevance of the sub-skills to the main skills, the clarity of the items, and the appropriateness of it to participants' academic level.

### **Test Reliability**

The reliability of the free translation was evaluated by three different raters to establish inter-rater reliability. For the English passage, the correlation coefficient between the first and the second rater was 0.81, between the second and the third rater was 0.85, and between the first and the third rater was 0.84. For the Arabic passage, the correlation coefficient between the first and the second rater was 0.83, between the second and the third rater was 0.85, and between the first and the third rater was 0.86.

### **Test Timing**

The researcher determined the translation skills test time by dividing the time taken by the first and last students by two. Thus, the test time for the translation skills test lasted one hour and a half. Accordingly, three raters evaluated free translation and calculated an average score. Evaluation criteria for free translation included vocabulary selection, finding equivalent for Idiomatic expression, grammatical cohesion, clarity, lexical consistency, contextual appropriateness, cultural nuances, cultural

sensitivity, smoothness and fluidity of language use, and authenticity. The overall score for the translating skills test is 100. For the table of specification, see appendix(B) .

### **Translation Skills Scoring Rubric**

#### **Purpose of the Rubric**

The translation skills scoring rubric was developed by the researcher to assess the translation skills of the study sample both before and after the intervention. This rubric serves as a measuring instrument to evaluate the translation skills necessary for the research participants. It was submitted to a panel of jury members specialized in the field of English teaching methods to ensure its validity and suitability. The translation skills scoring rubric is provided in Appendix (C).

#### **Constructing the Rubric**

The following steps were followed in designing the translation skills analytic scoring rubric:

1. Review: Examined previous studies and literature on performance assessment and rubric design, such as Samir and Tabatabaee-Yazdi (2020).
2. Rubric preparation that included equivalency, fluency, accuracy, cultural context, and naturalness skills:
3. Grammar requires many aspects, such as an agreement between the subject and verb , proper use of verb forms, adjectives, adverbs, and nouns.
4. Usage, which involves the proper use of the target language.
5. Omissions include leaving out something that is not essential to the meaning.
6. Completeness that indicates each sentence, paragraph, title, header, and subheading must be translated.
7. Punctuation, which includes using proper TL punctuation, includes full stops, question marks, commas, colons, semi-colons, exclamation points, quote marks, dashes, hyphens, parentheses, brackets, braces, slashes, and paragraphing.
8. Cohesion and consistency require that words written in the ST be translated accordingly in the TT.
9. Accuracy that requires transferring the content and meaning of the ST into the TL completely.
10. Fluency, which means naturalness, readability, no ambiguity, and no mistranslation, should employ the natural structure of the target language. The translation should adhere to the typical grammar, vocabulary, idioms, word order, and syntax of the target language to ensure clarity and avoid any ambiguities or errors.

11. Distributing the scores for sub-skills. Each skill included five levels: 5 (excellent), 4 (good), 3 (satisfactory), 2 (needs improvement), and 1 (unsatisfactory).
12. Verifying the validity and reliability of the rubric.
13. Writing the final version of the rubric.
14. Training the second rater on how to use the rubric.

### **Validity of the Translation Skills Rubric**

The researcher submitted the initial version of the rubric to five TEFL experts to

evaluate it. They were asked to evaluate it in terms of content and the level of the skills measured. Their suggestions were done. For the final version of the rubric and the criteria for judging it, see appendix (D).

### **Reliability of Translation Skills rubric**

The translation skills scoring rubric was administered twice to (20) students and evaluated by two raters. Then, the Pearson correlation formula was used to calculate the correlation between the two administrations which is ( $r = 75.0$ ), significant at the level 0.01. Thus, the rubric was considered reliable.

### **Procedures of the study**

- The intervention followed four main steps: pretesting, orientation, intervention and post testing. For achieving homogeneity among the three groups, the researcher pretested them all. Prior to starting the instructional sessions, participants were provided with an orientation session for the proposed intervention. The researcher explained the procedural steps for utilizing both Google Translate (<https://translate.google.com/>) and Reverso (<https://www.reverso.net/>) for the first experimental group (NMT), supplying them with the particular links. For the second experimental group (LLMs), instructions were provided on the utilization of QuillBot (<https://quillbot.com/>) and ChatGPT (<https://chatgpt.com/>), along with the corresponding links. For the third experimental group, instructions were given to them on how to use (NMT) and (LLMs) tools.
- Selected passages involving fragments of sentences, short sentences, idioms, and brief narratives were given to the three groups. Participants were tasked with translating these passages using the aforementioned tools. Following the translations, participants were instructed to attempt translations independently. The total number of passages provided amounted to 47.
- The researcher/ teacher then supplied participants with a model answer key for the translated passages, which were mostly human

translations. Participants were tasked with comparing and contrasting the machine or AI translations with the model translations. Each experimental group received the same set of passages separately.

- Following the comparison task, participants engaged in a discussion with the researcher or instructor to explore the differences between the machine or AI translations and the model translations. This discussion aimed to reach participants' perceptions, observations, and reflections on the translation quality, accuracy, and linguistic nuances present in both types of translations.
- Afterwards, participants were provided with additional translation tasks, utilizing the same tools and procedures, to further reinforce their understanding and application of machine or AI translation techniques. These tasks covered a variety of text genres and complexities, allowing participants to practice and refine their translation skills.
- At the conclusion of the instructional sessions, participants completed a post-test, to evaluate their translation performance following the intervention. The post-test included the same pretest passages and idioms to assess participants' progress and proficiency in translation skills.
- Additionally, participants were invited to provide feedback on their experience with the instructional sessions, including their perceptions of the effectiveness of the intervention, challenges encountered, and suggestions for improvement.

## Results and discussion

To verify the research hypotheses, (SPSS/PC) was used for statistical analysis. In analyzing the first hypothesis, Paired Statistics was used to verify the difference between the Pre-Post performance of the experimental group students in translation Skills Test of the NMT group. Consequently, in analyzing the second hypothesis, the Independent Samples t-test was used to verify the difference between experimental group and control group's post-test results. Additionally, a One-Way between subjects ANOVA was used for comparing post-test results concerning the three experimental groups. The abbreviation NMT refers to Google and Reverso groups" while LLMs refers to *ChatGPT and QuillBot groups*.

For verifying first hypothesis that states that: "There are no statistically significant differences between the mean scores of the first experimental

group (NMT) pre and post administrations of translation skills test”, paired samples t-test was used as shown in the following

Table 2

*Paired Statistics of the Pre-Post translation Skills Test of the NMT group*

Group	N	Mean	Std. Deviation	t	df	Sig.
Total pre-NMT group		15.1429	6.11789	11.501	20	.000
Total post-NMT group	21	31.7619	2.94796			

\*significant at level 0.001

In table 2, the mean number for the NMT group in the pre-test of the *translation skills* test is ( $N=21$ ,  $M =15.1429$ ,  $SD =6.11789$ ), and in the post-test ( $M =31.7619$ ,  $SD =2.94796$ ). Thus, this higher difference indicates an improvement in translation skills after the intervention using NMT tools. The standard deviation in the post-test (2.94796) is lower than in the pre-test (6.11789), suggesting that the scores are more consistent after the intervention. The t-value of 11.501 is quite high, and the significance level (p-value) of 0.000 indicates that the results are statistically significant at the 0.001 level. That is to say, the use of Neural Machine Translation (NMT) tools significantly improved the translation skills of the participants in the NMT group. The improvement is both statistically significant and meaningful, as shown by the large increase in mean scores and the reduction in standard deviation.

For verifying the second hypothesis that states that: “There are no statistically significant differences between the mean scores of the second experimental group (LLMs) pre - and post administrations of translation skills test”, paired samples t-test was used as shown in the following

Table 3

*Paired Statistics of the Pre-Post translation Skills Test of the LLMs group*

Group	N	Mean	Std. Deviation	t	df	Sig.
Total pre-LLMs group		14.9000	4.93004	9.076	19	.000
Total post-LLMs group	20	26.5000	4.05878			

As explained in table 3, the mean number for the LLMs group in the pre-test of the *translation skills* test is ( $N=20$ ,  $M =14.9000$ ,  $SD =4.93004$ ), and in the post-test ( $M =26.5000$ ,  $SD =4.05878$ ). Thus, this

higher difference indicates an improvement in translation skills after the intervention using LLMs tools. The standard deviation in the post-test (4.05878) is slightly lower than in the pre-test (4.93004), suggesting that the scores are somewhat more consistent after the intervention. The t-value of 9.076 and the p-value of 0.000 indicate that the difference in mean scores is statistically significant at the 0.001 level. Therefore, the use of LLMs tools significantly improved the translation skills of the participants in the LLMs group. The considerable increase in mean scores from the pre-test to the post-test demonstrates the effectiveness of the intervention. Additionally, the statistically significant t-value confirms that this improvement is not due to random variation, but rather to the impact of the LLMs tools on the participants' translation skills. The slight reduction in standard deviation also suggests an improvement among participants. Overall, the data asserts that LLMs tools are effective in enhancing translation skills.

For verifying the third hypothesis that states: “There are no statistically significant differences between the mean scores of the third experimental group (integration between NMT and LLMs) pre - and post administrations of translation skills test.”, the paired samples t-test was used as shown in the table 4.

Table 4

*Paired Statistics of the Pre-Post translation Skills Test of the NMT group*

Group	N	Mean	Std. Deviation	t	df	Sig.
Total pre-NMT+LLMs group	21	15.3810	5.96218	12.780	20	.000
Total post-NMT+LLMs group		37.1905	3.51595			

\*significant at level 0.001

The Paired Samples Statistics table revealed the mean number for the integration of NMT and LLMs group in the pre-test of the *translation skills* test is ( $N=21$ ,  $M = 15.3810$ ,  $SD = 5.96218$ ), and in the post-test ( $M = 37.1905$ ,  $SD = 3.51595$ ). Hence, this great difference indicates an improvement in translation skills after the intervention using integration of NMT and LLMs tools. The standard deviation in the post-test (3.51595) is slightly lower than in the pre-test (5.96218), suggesting that the scores are to some extent more consistent after the intervention. The t-value of 12.780 and the p-value of 0.000 indicate that the difference in mean scores is statistically significant at the 0.001 level. Therefore, the use of integration of NMT and LLMs tools significantly improved the



translation skills of the participants. The significant increase in mean scores from the pre-test to the post-test asserts mainly the effectiveness of the intervention. Consequently, the statistically significant t-value confirms that this improvement is not due to random variation, but rather to the impact of the integration of NMT and LLMs tools on the participants' translation skills. The slight reduction in standard deviation also suggests an improvement among participants. Overall, the data confirms that integration of NMT and LLMs tools are effective in enhancing translation skills.

For verifying the fourth hypothesis that states that: “There are no statistically significant differences between the mean scores of the three experimental groups in the post-administrations of translation skills test”, One-way Analysis of Variance (ANOVA) Test was used as shown in the following table.

Table 5  
*One-way Analysis of Variance (ANOVA) Test of the Three Experimental Group in translation skills test in the Post-Test*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1171.372	2	585.686	47.075	.000
Within Groups	734.048	59	12.441		
Total	1905.419	61			

Since the significance value is less than (0.05), the researcher can conclude that there was a statistically significant difference between the mean of the translation skills for all experimental groups. Since the significance value, as shown in table 5, is  $< (0.001)$ ,  $p = (0.000)$ , the researcher can conclude that there was a statistically significant difference between the mean score of translation skills test for the three groups. The ANOVA table mentioned previously provides the "omnibus F-test" in which there is at least one significant difference between a pair of means. Actually, there are three unique pairs of means in the current study. There was a significant effect of used tools on translation skills tests at  $p < 0.05$  level. That is to say, there was a statistically significant difference between the three experimental groups as determined by one-way ANOVA on translation skills test at  $p < 0.05$  level for three used tools [ $f(2, 59) = 47.075, p = 0.000$ ] that indicates at least one significant difference among the means.

## Discussion

As for the Paired Samples Statistics table, the mean number for the NMT group ( $N = 21$ ). Concerning statistics table for each translation (See appendix E). As for the “equivalency” subskill in the pre-test is ( $M = 2.7619$ ,  $SD = 1.57812$ ) and in the posttest ( $M = 6.4286$ ,  $SD = .74642$ ). As for “fluency” subskill mean in the pre-test ( $M = 3.0000$ ,  $SD = 1.64317$ ) in the post-test ( $M = 6.3333$ ,  $SD = .91287$ ). In “accuracy” subskill, mean in the pre-test ( $M = 3.2857$ ,  $SD = 1.58565$ ), and in the post-test ( $M = 6.5714$ ,  $SD = .92582$ ). “Cultural context” subskill in the pre-test revealed the following resulting data ( $M = 3.0952$ ,  $SD = 1.04426$ ) and in the post-test ( $M = 6.2857$ ,  $SD = .78376$ ). As for “naturalness” subskill, in the pre-test ( $M = 3.0000$ ,  $SD = 1.30384$ ) in the post-test ( $M = 6.2857$ ,  $SD = .78376$ ).

While social robots have the potential to facilitate student learning outcomes, there are a few aspects that require particular attention in order to utilize robots in education more effectively (Kim, Merrill, Xu, & Sellnow, 2020). In the findings of their study, Alsalhi, Rawashdeh, Eltahir, Zakarneh, and Annamalai (2023) indicated a prevailing dissatisfaction with the effectiveness of online learning in enhancing language performance. The students struggle with sustaining effective communication through digital technological advancements, and the requirement to customize *Extensive Reading* programs to suit the specific needs of EFL students.

In line with the LLMs group ( $N = 20$ ), concerning the “equivalency” subskill in the pre-test is ( $M = 2.9000$ ,  $SD = 1.11921$ ) and in the posttest ( $M = 4.9500$ ,  $SD = 1.31689$ ). As for “fluency” subskill mean in the pre-test ( $M = 3.0500$ ,  $SD = 1.19097$ ) in the post-test ( $M = 5.5500$ ,  $SD = 1.19097$ ). In “accuracy” subskill, mean in the pre-test ( $M = 3.0000$ ,  $SD = 1.55597$ ), and in the post-test ( $M = 5.4000$ ,  $SD = 1.18766$ ). “Cultural context” subskill in the pre-test revealed the following resulting data ( $M = 3.0000$ ,  $SD = 1.141421$ ) and in the post-test ( $M = 5.2500$ ,  $SD = 1.11803$ ). As for “naturalness” subskill, in the pre-test ( $M = 2.9500$ ,  $SD = 1.23438$ ) in the post-test ( $M = 1.23438$ ,  $SD = .98809$ ). Thus, the significance level (Sig.) of .000 indicates that the observed difference between pre- and post-test scores is statistically significant at the  $p < .05$  level in the five translation sub skills. As for LLMs tool such as ChatGPT, it provides a specific chatting interactions that might help students improve their translation skills. It enables them from engaging in real-time conversations. This interaction allows students to ask questions and receive instant feedback. They could ask the ChatGPT to give more accurate translation, actually. it

did. This supports a dynamic and responsive learning process to their needs. Specifically, students who found the AI teaching assistant to be helpful and effortless to communicate with were more likely to have positive attitudes and intentions to use it (Kim, Merrill, Xu & Sellnow, 2020).

However, there is a difference between completely adopting and partially adapting. Teachers may admit the overwhelming spread of technological tools without confessing their inability to match their rush. Teachers should seek professional training and development; otherwise, they may discover their role changing from teacher-centered classroom to non-teaching teacher.

Ahmed, Roy, Kajol, Hasan, Datta, and Reza (2023) assert that language models, like ChatGPT, enable users to ask questions and receive human-like answers. These models use a "context window" to store the history of conversations. This history of conversations may be saved either forever or up to a specific limit, without deleting previous conversations. Their findings highlight ChatGPT's exceptional performance. They consider it a leading model in the field. Thus, Marzuki et al. (2023) examined various types of AI writing tools used in EFL teaching. They concluded that there was a possibility that students could become overly reliant on these tools, which could inhibit the growth of their critical thinking and problem-solving skills. As for *QuillBot*, it translates without giving room for improvement. So, ChatGPT exceeds *QuillBot* at this point.

Concerning the Paired Samples Statistics table of the integration of NMT and LLMs group, the mean number is ( $N = 21$ ). In the "equivalency" subskill in the pre-test is ( $M = 2.7619, SD = 1.51343$ ) and in the posttest ( $M = 7.2381, SD = 1.13599$ ). Thus, students improved greatly in producing equivalent translations. As for "fluency" subskill mean in the pre-test ( $M = 3.3810, SD = 1.59613$ ) in the post-test ( $M = 3.6364, SD = .92582$ ). Therefore, slight improvement, indicating a need for further focus. A significant improvement, with more consistent accurate translations skills were found in "accuracy" subskill. As the mean in the pre-test was ( $M = 3.2857, SD = 1.55380$ ), and in the post-test was ( $M = 7.6667, SD = 1.01653$ ). "Cultural context" subskill in the pre-test revealed the following resulting data ( $M = 2.9048, SD = 1.33809$ ) and in the post-test ( $M = 7.3333, SD = .85635$ ). So, Substantial improvement in handling cultural nuances. As for "naturalness" subskill, in the pre-test ( $M = 3.0476, SD = 1.32198$ ) in the post-test ( $M = 7.5238, SD = .87287$ ). Hence, major improvement in creating natural-sounding translations. the

integration of NMT and LLMs led to significant improvements in all translation subskills.

In this context, Fischer, Lundin, and Lindberg (2022) note that traditional education methods, involving passive lecture absorption and memorization, were sufficient when changes were infrequent, and learned skills remained relevant for a lifetime. Traditional classroom instruction has limitations, particularly in providing immediate learning environments, quick evaluations, and high engagement in large classes. Digital learning tools and technology address these gaps by offering efficiencies that traditional methods cannot match (Abd Haleem Javaid, Qadri, & Suman, 2022). Their findings offer valuable implications for educators, policymakers, and practitioners in optimizing the integration of AI tools into EFL learning environments while addressing potential challenges and fostering positive learning outcomes.

### Qualitative analysis

Results indicated the participants of the NMT and LLMs group outperformed their counterparts in the control group.

Table 6

Comparison between NMT "Google and Reverso" and LLMS "ChatGPT and QuillBot" in Sentence Fragments

	Source text	NMT	LLMS	Target language
Fragments	علم، أدركت، ظل، مدرسته، درسه	Teach, realize, shadow, poison, his school, grow up, study him "Google"	Learned, I understood, remained, his school, grew, his lesson." <i>ChatGpt</i>	علم: knowledge, learned, to be learned, أدركت, I realized, she realized, ظل shadow, remained, مدرسته his school, his teacher
		Learn, I realized, shade, his school, growing up, his lesson. <i>Reverso</i>	science , realize, shadow, school, grow up, study. <i>QuillBot</i>	his lesson, taught him

Table 7

Comparison between NMT "Google and Reverso" and LLMS "ChatGpt and QuillBot" in Sentence Translation

	Source text	NMT	LLMs	Target language
Sentence	I've always believed that success for anyone is all about drive, dedication, and desire, but for	لقد اعتقدت دائماً أن النجاح بالنسبة لأي شخص يعتمد على الدافع والتفاني والرغبة، ولكن بالنسبة لي، فهو يعتمد أيضاً على الثقة والإيمان.	لطالما اعتقدت أن النجاح لأي شخص يتعلق بالدافع والتفاني والرغبة، ولكن بالنسبة لي، كان الأمر أيضاً	لطالما أمنت أن نجاح أي شخص مبني على الـ'دافع، الإصرار والرغبة، لكن بالنسبة لي، كان أيضاً مبني

me, it's also been about confidence and faith.

"Google Translate"

"لطالما أمنت أن نجاح أي الدافع، شخص مبني على الإصرار والرغبة، لكن بالنسبة لي، كان أيضاً مبني على الثقة والإيمان  
"Reverso"

يتعلق بالثقة والإيمان  
"ChatGpt"

على الثقة والإيمان

Concerning sentences and sentences fragments translation, there is a difference between NMT and LLMs tools. By comparing the translated text with the original text, ChatGPT is able to provide translations that are more accurate and closely match to the original meanings of the words and phrases. The essence of the original language is effectively conveyed with little change or ambiguity. On the other hand, there are more errors and inconsistencies in Google Translate's output, along with some incorrect translations and strange wording. Thus, according to this research, ChatGPT seems to be the better choice for this text. Khoshafah (2023) claims that, Moreover, AI-generated content often lacks the nuanced use of figurative language like personification, simile, metaphor, and hyperbole. The complexities of these literary devices make it challenging for AI systems, resulting in content that tends to be overly literal and may miss the depth found in human-generated writing.

When considering fragments, a prominent challenge pertains to unvocalized words, a subject that has garnered significant attention among researchers. Furthermore, Zakraoui, Saleh, Al-Maadeed, and Alja'am, (2021) argue that in Arabic it is hard to identify the correct sense of a given word that has multiple meanings (an ambiguous word). Specifically, un-vocalized words have different concepts in different contexts. For instance, the un-vocalized word "ذهب" can be translated as verb such as "go" or as a noun "gold". The word "Hassan." This poses a challenge in determining the precise intended meaning, complicating the analysis of its morphological structure. Without diacritics, the word can have multiple potential meanings, including "beauty," "well," "pretty," "improve," "amend," "ok," and more. Another example that clears up that notion is the word قدم. It may be read giving different meanings step or ahead قَدَمٌ, as old as قَدَمٌ, foot قَدَمٌ. Additionally, swimming سِبَاحَةٌ, swimmer سِبَاحَةٌ. Further example is: paradise الْجَنَّةُ, jinn الْجِنَّةُ, shield الْجُنَّةُ.

Table 8  
 Comparison between NMT "Google and Reverso" and LLMS "ChatGPT and QuillBot" in Idioms Translation

Source text	Google	ChatGpt	Target language
All flesh is not venison.	ليس كل لحم لحم غزال Google كل اللحم ليس لحم الغزال Reverso	ليس كل لحم فريسة	ما كل بيضا شحمة ولا سوداء فحمة/ ليس كل ما يلمع ذهباً
A flash in the pan	ومبيض في المقالة Google فلاش في المقالة Reverso	وهج في ChatGPT المقالة ومبيض في المق QuillBot	رب رمية من غير رام
Don't put your head in the lion's mouth	لا تضع رأسك في فم الأسد	لا تضع رأسك في فم الأسد	لا تلقوا بأيديكم إلي التهلكة
Always has been, always will be	لقد كان دائماً، وسوف يكون دائماً لطالما كان، وسيكون Reverso	دائماً كان كذلك، وسيكون دائماً كذلك كان دائماً دائماً، دائماً سيكون دائماً QuillBot	من شب علي شبيء ، شاب عليه

When it comes to idioms, the translations by Reverso generally exhibit a higher level of accuracy and fluency compared to Google and ChatGPT. Reverso's translations maintain the idiomatic essence of the source text while ensuring grammatical correctness in the target language. For instance, in the first idiomatic expression "All flesh is not venison," Reverso provides a more accurate translation: "كل اللحم ليس لحم الغزال," capturing the intended meaning effectively. Google's translation, "ليس كل لحم لحم غزال," is grammatically correct but lacks the idiomatic sense of the original expression. ChatGPT's translation, "ليس كل لحم فريسة," also captures the meaning but is less idiomatic and may not convey the intended message as effectively. Therefore, LLMs tools often cannot provide the expected level of accuracy in translation. This could be



attributed to the lack of training data specific to idiomatic expressions, as idioms are inherently associated to the cultural context of each language.

Machines find processing human language challenging due to the complex interplay of various word types necessary for conveying meaning. The presence of ambiguity further complicates this task for computers, as noted by Johri et al. (2021). Consequently, they emphasize the need for improvement in natural language processing in areas such as deciphering data infused with sarcasm, irony, and idioms, which continue to present difficulties despite the utilization of advanced techniques and tools. Therefore, despite advancements in AI, challenges persist in capturing the nuances of cultural references, crucial for effective translation.

Abu-Rayyash (2024) confirmed that translations generated by GPT-4 have the potential to deliver a visual experience that is either on par with or better than human translations. However, the results highlight how crucial it is to improve AI algorithms, promote cooperation between AI and human translators, and set strict guidelines for AI-generated translations that take target audience preferences and changing comedic trends into account. However, some researchers adhere to the notion that AI tools may negatively affect students acquisition of the language. According to Kipfer (2015), print dictionaries offer advantages over online ones, promoting coincidental word discovery, providing comprehensive and cognitively stimulating word entries, enhancing spelling and language skills through alphabetical exploration, and offering rich visuals and an ad-free experience. The tangible nature of print dictionaries provides a sense of satisfaction and supports consistent terminology. Browsing in a single print dictionary aids vocabulary growth and word recall, making print dictionaries invaluable tools for language enthusiasts and learners.

In addition, Alhumaid (2019) offers a thorough exploration of the risks tied to incorporating technology in classrooms, emphasizing potential negative effects on students' academic performance. She highlights concerns such as the impact of typing on handwriting and reading abilities, the potential for a superficial understanding of information, and the decline of fundamental skills like reading, writing, and arithmetic. Additionally, Alhumaid addresses the risk of social disconnection among students in the digital realm, leading to meaningful social interaction disparities. The accessibility gap to technology further exacerbates social disparities among students, creating a divide.

Likewise, the difficulty that EFL students face in translation, as highlighted in the study, could be exacerbated by tools that do not handle

idiomatic expressions well. This is significant because idioms often carry cultural nuances that are crucial for proper translation. The lack of specific training data for idiomatic expressions in LLMs like ChatGPT may contribute to their lower performance in this area.

Table 9

Source text	Google	ChatGpt	Target language
<p>A Lion had come to the end of his days and lay sick unto death at the mouth of his cave, gasping for breath. The animals, his subjects, came round him and drew nearer as he grew more and more helpless. When they saw him on the point of death, they thought to themselves: 'Now is the time to pay off old grudges.'</p>	<p>لقد وصل الأسد إلى نهاية أيامه ومرض حتى الموت في فم كهفه يلهث أنفاسه. الحيوانات، له رعاياه، أحاطوا به واقتربوا منه كلما كبر أكثر وأكثر عاجزة. فلما رأوه على حافة الموت قالوا فكروا في أنفسهم: «الآن هو الوقت المناسب لتسديد الضغائن القديمة</p> <p>وقد وصل اسد الى نهاية ايامه ومرض حتى الموت عند فم كهفه يهث للنفس. فجاءت الحيوانات، رعاياه، حوله واقتربت اكثر كلما ازداد عجزا. فلما رأوه عند نقطة الموت فكروا الى انفسهم: « الآن هو وقت دفع الحقد القديمة " QuillBot"</p>	<p>لقد اقترب الأسد من نهاية أيامه واستلقى مريضاً حتى الموت عند مدخل كهفه، يتنفس بصعوبة. جاءت الحيوانات، مواضعته، واقتربوا أكثر كلما أصبح أكثر عجزاً. عندما رأوه على وشك الموت، فكروا في أنفسهم: "الآن حان الوقت لتسوية الحسابات القديمة"</p>	<p>استلقى الأسد المريض عند مدخل كهفه وهو يلفظ أنفاسه الأخيرة. فتجمع حوله أتباعه من الحيوانات، وبدأوا بالاقتراب منه كلما ازداد عجزاً، وعندما رأوه قد شارف على الموت وجدوا بأن الوقت قد حان للانتقام</p>

Comparison between NMT "Google and Reverso" and LLMs "ChatGPT and Quill Bot" in Long Texts Translation

A Lion had come to the end of his days and lay sick unto death at the mouth of his cave, gasping for breath. The animals, his subjects, came round him and drew nearer as he grew more and more helpless. When they saw him on the point of death they thought to themselves: 'Now is the time to pay off old grudges.' translate into arabic

**ChatGPT**  
Here's the translation into Arabic:

لقد اقترب الأسد من نهاية أيامه واستلقى مريضاً حتى الموت عند مدخل كهفه، يتنفس بصعوبة. جاءت الحيوانات، مواضعته، واقتربوا أكثر كلما أصبح أكثر عجزاً. عندما رأوه على وشك الموت، فكروا في أنفسهم: "الآن حان الوقت لتسوية الحسابات القديمة"

**You**  
Improve it more.

**ChatGPT**  
Certainly, here's a refined version:

لقد اقترب الأسد من نهاية أيامه واستلقى مريضاً حتى الموت عند مدخل كهفه، يتنفس بصعوبة. جاءت الحيوانات، مواضعته، واقتربوا أكثر كلما أصبح أكثر عجزاً. وعندما رأوه على وشك الموت، خطرت في أذهانهم فكرة: "الآن حان الوقت لتسوية الحسابات القديمة"

In terms of accuracy and coherence, the translation offered by "ChatGpt" appears to be more in line with the original text. It conveys the intended

message with clarity and precision, skillfully capturing the story of the dying lion and the other animals' reactions. It also keeps the text flowing naturally, which improves readability and comprehension.

Consequently, the study's findings underscore the importance of selecting appropriate AI tools that cater to the specific challenges of translation, ultimately enhancing students' translation skills in equivalency, fluency, accuracy, cultural context, and naturalness. Hence, according to the findings of the current study, ChatGPT may be more effective than QuillBot and Google Translate to further develop translation skills among Basic Education English major students. ChatGPT may excel the other tools due to its advanced language processing capabilities, which allow for a deeper understanding of context and nuance in translation tasks. Unlike Google Translate, which uses statistical and neural machine translation methods, ChatGPT has been trained on a lot of different language data, making it better at understanding idioms and cultural details. This ability is particularly crucial for translations in context, where the accuracy and contextual appropriateness of translations significantly impact learning outcomes.

Furthermore, ChatGPT's interactive nature eases improvement and clarification. It offers students immediate, contextually relevant feedback. This interactive engagement can help in developing a more intuitive grasp of translation skills, and hence, enhancing their overall translation proficiency. Consequently, the study indicates that integrating ChatGPT into language learning setting can provide a more robust and effective tool for improving translation skills compared to traditional NMT tools like Google Translate and QuillBot.

Another issue that the study revealed is the teacher student's relationship. The study found that effective translation skill development relies not only on the tools used but also on the teacher-student relationship. A supportive relationship enhances students' learning experiences, motivates deeper engagement with the material, and builds confidence in using AI tools. Teachers are crucial in guiding students on tool usage, providing feedback, and creating an encouraging learning environment. Thus, a strong, collaborative teacher-student relationship is essential to maximize the benefits of AI tools in translation education. This is consistent with Lubold, Walker, Pon-Barry, and Ogan (2019) who explored how paraverbal entrainment affects rapport and learning with the robot Emma. They found that participants had stronger rapport and better learning outcomes when Emma engaged socially and adapted simultaneously, especially among those familiar with interacting with robots. The study suggests future research directions to explore combined

impacts of entrainment and social behavior and diverse entrainment strategies based on individual adaptation patterns. Additionally, Holstein, McLaren, and Alevan (2019) found that educators expressed dissatisfaction with an AI design approach aimed at resolving conflicts between students and their student models. In contrast, students preferred teacher-in-the-loop mediation, believing that teachers understood their needs better than software. Educators considered this approach inefficient and raised concerns about potential competition with AI in education.

In conclusion, although Artificial Intelligence (AI) has achieved significant milestones in the domain of language learning, yet it concurrently presents formidable challenges that have substantial implications for language teaching and learning across various facets. So far, few reviews have been deployed to explore how AI presents challenges in E-english as a Foreign Language (EFL) teaching and learning. Thus, a call for adaptation, not adoption of AI has emerged; reskilling forming and upskilling digital natives since it was known that an over-reliance on AI-generated feedback was one of the significant challenges that impeded critical thinking and individual creativity. It was essential to maintain a balance between encouraging solo language skills and using the AI's recommendations (Song & Song,2023).

Kleinman and Vallance (n.d.) state that Geoffrey Hinton, considered a key figure in artificial intelligence (AI), resigned from Google at the age of 75, citing concerns about the growing risks associated with AI developments. He expresses regret for his past work and highlights the worrisome nature of the potential dangers posed by AI chatbots. According to Hinton, while AI chatbots are not currently more intelligent than humans, he believes they may become so in the near future, emphasizing the need for caution. Widening the gap between those who have technological advancements and those who do not, and, therefore, worsening digital poverty. Briefly, the future of AI harbors loads of ambiguities. It increases level of preparedness; expect the unexpected. Now, stakeholders in educational settings have to confront the evolution and revolution of AI. AI translation tools must be adapted, not simply adopted. The potential for these tools to widen the gap between those with and without technological access, thereby worsening digital poverty, needs consideration. The impending technological surge is inevitable and requires careful navigation. Understanding AI's implications and predicting its future contributions to translation is essential. The possibility of human-AI "co-orchestration" in translation should be explored.

AI might redefine the roles of translators and translation education. Traditional methods could be complemented or replaced by AI tools that handle languages and corrections. However, even if AI excels in translation, it may lack the human touch needed in the social context of learning. Whether AI can foster critical, analytical, and creative

### **Recommendations**

Based on the results of the present research, the following recommendations are proposed:

1. Give more attention to teaching translation methods to EFL majors in faculties of education.
2. EFL university lecturers should be up-to-date with AI tools in teaching and learning translation skills.
3. Instructors should delve into a variety of sub-translation skills beyond the most common ones to help university students improve their overall translation proficiency.
4. Incorporate Neural Machine Translation (NMT) and Large Language Models (LLMs) in translation teaching and learning.
5. Provide Systematic Training sessions for students on how to effectively use AI tools in translation.

### **Suggestions for Further Research:**

Further research is proposed to investigate the following:

1. Explore the effectiveness of different AI tools on other language skills, such as reading writing, speaking and listening.
2. Investigate the long-term impact of AI integration in translation education on students' professional performance in real-world translation tasks.
3. Examine the potential role of AI in enhancing other types of translation such as collaborative translation among EFL students.
4. Investigate the ethical implications of AI tools adoption in translation learning primarily with issues of accuracy, bias, and cultural sensitivity.
5. Explore incorporating integrate AI tools with traditional translation teaching methods to optimize learning outcomes for students.



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